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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,008	06/23/2004	Hisaji Oyake	120155	2772

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P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

VERDERAME, ANNA L

ART UNIT	PAPER NUMBER
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1756

MAIL DATE	DELIVERY MODE
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05/02/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/500,008

Applicant(s)

OYAKE ET AL.

Examiner

Anna L. Verderame

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 06/23/2004
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2,5, and 10-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims recite a "quantity X of Pd" and a "quantity Y of Pd". It is unclear as to whether the word quantity refers to the thickness of the Pd film or whether the word quantity refers to the composition of the film.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3-4, 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Kamiyama et al. JP-09109276 in view of Sato et al. 5,939,510.

Kamiyama et al teaches a method for manufacturing a stamper for an optical disc comprising the steps of forming a photoresist layer on a glass substrate, patterning the resist by exposing it to light and developing said pattern, coating the patterned resist with a tin-palladium system processing agent, removing the tin component, electrolessly

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plating nickel on the thus formed Pd layer, and finally peeling the palladium layer and the nickel layer from the photoresist to obtain an optical disc stamper (0060-0064). Tin-palladium colloidal system is taught at (0034). Use of accelerator is taught at (0040). A plating solution containing NiCl_2 is taught at (0036). The tin-palladium system activator is commonly used to form a seed layer on which to form the plated nickel layer. The negatively charged colloidal system is adsorbed onto the surface of the resist. The tin component is removed. The Pd layer allows for the formation of a more even nickel layer than would be formed on the photoresist alone (0005-0006).

Kamiyama et al. does not teach the use of a light-absorbing layer between the glass substrate and the resist.

In example 1, Sato et al. teaches the use of an undercoating solution containing 4,4'-bis(diethylamino) benzophenone and 2,2',4,4'-tetrahydroxyl benzophenone in propyleneglycol monomethyl ether acetate. The undercoating solution is coated onto a silicon substrate and then dried for 90 seconds at 90°C and then subjected to a heat treatment at 180°C for 5 minutes. The thickness of the undercoating layer is 100 nm. The undercoating layer is covered with a photoresist layer. The photoresist layer is 1000 nm thick. The photoresist layer is then patterned(11/34-65). 4,4'-bis-(diethylamino) benzophenone exhibits an excellent anti-reflective effect (4/46-48). The benefits of using an anti-reflective (light-absorbing) undercoating were evaluated based on the effect these coatings had on the selectivity ratio, intermixing of layers, notching, and anti-reflective effect. These terms are defined at (11/1-31). Results are shown in table one(13/40-50). The comparative layer did not have an anti-reflective

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undercoating. The use of the undercoating layer decreased the adverse influences caused by reflection of light, and decreased intermixing between layers and notching and increased the selectivity in the etching rates between the patterned resist layer and the undercoating layer(abstract).

Sato et al. does not teach the use of the patterned resist to form a stamper for an optical disc.

It would have been obvious to one of ordinary skill in the art to modify the mastering process taught by Kamiyama et al. by providing an anti-reflective (light-absorbing) undercoating between the substrate and the photoresist based on the example of Sato et al. and with the expectation of forming a useful photoresist master having the benefits taught in Sato et al. in the abstract and at (13/40-50).

5. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kamiyama et al. JP-09109276 in view of Sato et al. 5,939,510 as applied to claims 1,3-4, and 6 further in view of Takei JP-02277791 and Takahata et al. 2001/0044078.

The combination of Kamiyama et al. JP-09109276 in view of Sato et al. 5,939,510 does not teach the mastering process as recited in claims 7-9.

Takahata et al. discloses the use of a stamper master to stamp directly(claim 7) or alternatively the formation of a mother stamper (claim 8) from the master stamper by forming a nickel film laminate on the master stamper. Formation of a child stamper(claim 9) from the mother stamper is also disclosed. The master stamper, the

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mother stamper, or the child stamper may be used to stamp the optical disk substrate (0006). A mastering process is taught at (0037-0043).

Takei et al. illustrates a mastering process in which a master stamper 1 is used to form a mother stamper 5' and subsequently the mother stamper is used to form a child stamper 8'(abstract and illustration).

It would have been obvious to stamp the optical disc substrate directly using the master stamper or alternatively to form a mother stamper from the master stamper or to form a child stamper from the mother stamper, and to stamp the optical disc substrate using either the mother or child stamper, based on the example of Takei et al. and Takahata et al. with the reasonable expectation of forming a useful patterned optical disc substrate.

6. Claims 2,5, and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kamiyama et al. JP-09109276 in view of Sato et al. 5,939,510 further in view of Takei Jp-02277791 and Takahata et al. 2001/0044078, further in view of Kurataka et al. 7,074,341.

The combination of Kamiyama et al. JP-09109276 in view of Sato et al. 5,939,510 further in view of Takei JP-02277791 and Takahata et al. 2001/0044078 does not teach the formation of a Pd film where the quantity of Pd on the unpatterned area is Y and the thickness on the patterned area is X and the relationship $0.9X < Y < 1.1X$ is satisfied.

Kurataka et al. teaches a substrate having a patterned area and an un-patterned periphery(12/62-13/2)(also shown in figure 7). The substrate is then punched to form a

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stamper/imprinter having the desired dimension (size) and or shape(13/24-38). Method for forming a stamper for an optical recording medium is taught at (10/1-11/3).

The Pd film, as taught by Kamiyama et al., is used to provide a seed layer on which to form the Ni layer. The result is a topographically smoother Ni film. The thickness of the Pd film in the periphery (un-patterned area) of the substrate is unimportant because the un-patterned portion is removed in the punching process taught by Kurataka et al. Further, the use of a thinner Pd film on the periphery, where it is not as critical that the Ni layer be topographically smoother, would be obvious due to the added expense involved in forming a thicker film. The applicant has the burden under MPEP 2113 of showing criticality over the prior art.

It would have been obvious to one of ordinary skill in the art to form the Pd film such that Y which corresponds to the thickness of the film in the un-patterned area and X which corresponds to the thickness in the patterned area satisfy the relationship $0.9X < Y < 1.1X$ based on the example of Kurataka et al. and with the expectation of forming a useful and more cost-effective stamper.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir.

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1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1,3-4, and 6 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1,3, and 5 of U.S. Patent No. 7,204,188 in view of Kamiyama et al. JP-09109276.

The claims of the patent recite all of the limitations of the claims of the instant application except for the formation of a Pd metal film on the patterned photoresist.

Kamiyama et al. teaches a mastering process in which a palladium film is formed on the surface of a patterned photoresist (0060-0064).

It would have been obvious to one of ordinary skill in the art to modify the mastering process recited in the claims of Oyake et al. 7,204,188 by forming a Pd film on the surface of the photoresist based on the example of Kamiyama et al. at (0060-0064) with the expectation of forming a useful optical disc stamper.

This is a provisional obviousness-type double patenting rejection.

9. Claims 1, 3-4, and 6-9 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-9 of U.S. Application No. 10/500,893 in view of Kamiyama et al. JP-09109276.

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The claims of the co-pending application recite all the limitations of the instant claims except for the formation of a Pd metal film on the patterned photoresist.

Kamiyama et al. teaches a mastering process in which a palladium film is formed on the surface of a patterned photoresist (0060-0064).

It would have been obvious to one of ordinary skill in the art to modify the mastering process of Oyake et al. 10/500,893 by forming a Pd metal film on the patterned photoresist based on the example of Kamiyama et al. at (0060-0064) and with the reasonable expectation of forming a useful master stamper for an optical disc.

This is a provisional obviousness-type double patenting rejection.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anna L. Verderame whose telephone number is (571)272-6420. The examiner can normally be reached on M-F 8A-4:30P.

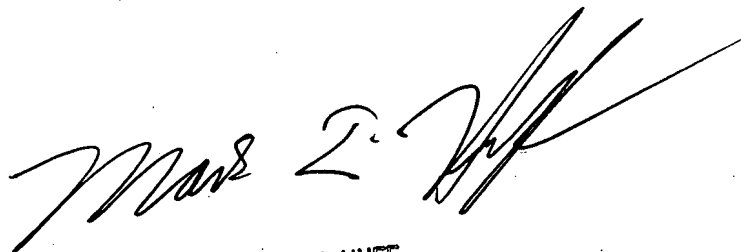
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on (571)272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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